Content

Section 13
Uintah Basin Plan

Utah State Water Plan

Disaster and Emergency Response

Government, communities and families all have a part to play in responding to emergencies. Being prepared may prevent an emergency from becoming a disaster.

13.1 Introduction

This section discusses flood hazard mitigation and drought response. It also briefly discusses programs presently in place and additional programs that could be beneficial in dealing with flooding and drought problems. The Division of Comprehensive Emergency Management (CEM) is the designated state coordinating agency for disaster and emergency response. Many types of emergency situations are water-related, varying from disastrous flooding to extreme drought. When a state emergency arises, a response plan, maintained by the Utah Division of Comprehensive Emergency Management (CEM), provides quick and effective coordination of state resources. The state also maintains a State Hazard Mitigation Team (SHMT) to provide hazard mitigation planning assistance to local jurisdictions and counties. The SHMT efforts may focus on either pre-hazard mitigation planning or post-hazard mitigation planning. Both planning efforts focus on measures that may lessen or eliminate the impact of future disasters. The following paragraphs define the organizational responsibilities for emergency response in the Uintah Basin, concentrating mainly on the two most common water-related emergencies, floods and droughts.

13.2 Background

Federal, state and local governments have statutory authority to plan for and respond to disasters. No one entity has enough authority to make and carry out all decisions necessary to mitigate a specific hazard or respond to a disaster. Sections 13 and 16 of the *Utah State Water Plan* (1990) present the specific authorities and programs vested in the various agencies.

13.3 Organizations and Regulations

Local, state and federal agencies are encouraged to work together in preparing for, and mitigating damages from, disaster events. Each level of government can contribute ideas and resources from their unique perspective.

13.3.1 Local

Local agencies are responsible for initial responses to emergencies. Cities and counties have primary responsibility for disaster response. This is articulated in Titles 10 and 17 of the *Utah Code Annotated, 1953, amended*. The agencies responsible for disaster response in Uintah and Duchesne counties are the county commissions. In Wasatch and Summit counties, the responsible agencies are Wasatch County Emergency Services and Summit County Emergency Services, respectively. In Daggett County, the mayor of Manila has the responsibility.

Local governments are required to carry out the following tasks to provide an effective first response to emergencies:

- Prepare an emergency operations plan for the coordination of local and county emergency responses and link it to potential assistance from appropriate federal and state agencies.
- Provide necessary resources (including special supplies and equipment) to support emergency relief operations and list these resources.

Procedures to be followed for obtaining assistance and use of resources in the emergency operation plans should be included.

- Assign and train personnel needed to perform disaster relief functions.

- Provide the State Disaster Coordinating Officer with copies of current emergency operations plans.

The Three County Local Emergency Planning Committee has a project called the *Green River Sub-Area Contingency Plan*, which deals with national oil and hazardous substances pollution.

13.3.2 State

In the event property damage and personal injuries exceed the capability of local agencies, the Governor may declare a "state of emergency." A state of emergency provides state assistance and allows the state to request federal assistance.

When a state of emergency is declared, the Governor's State Disaster Coordinating Office (SDCO) assumes responsibility for distributing state and federal assistance to local disaster victims. The SDCO works with local coordinators to distribute aid in an efficient and effective way. The SDCO also serves as the governor's primary point of contact for all disaster-related correspondence between federal, state and local disaster management officials.

One responsibility of the Utah Division of Comprehensive Emergency Management (CEM) is to generate an interest in developing emergency response and management plans. The CEM will assist towns, cities and counties prepare their own comprehensive emergency response and management plans. These plans should allow for close cooperation with state and federal agencies in the event that major disaster goes beyond local capabilities.

13.3.3 Federal

Federal assistance in a local disaster begins with a request from the Governor. If the President of the United States declares the event a federal emergency or major disaster, the state is eligible for federal assistance. Many assistance programs are available through the Federal Emergency Management Agency (FEMA). A "federal emergency" declaration makes available federal funding that may be required to save lives, protect property and restore essential public services. A "major disaster" declaration allows funding to restore public and private property and to change natural or man-made conditions that may contribute to future damage or additional disasters.

The Corps of Engineers frequently becomes involved in relief of flooding problems, at the request of the CEM, in the form of technical assistance, prevention, flood-fight assistance and post-flood mitigation recommendations. Emergency assistance is also provided by the U. S. Natural Resources Conservation Service and Farm Service Agency in times of drought, earthquakes or other natural disasters.

13.4 Flooding Problems

Damages from the major snowmelt flood in 1983 totaled about $10.1 million in the Uintah Basin. During the 1997 spring runoff, the Mosby Canal overtopped, causing extensive damage to the mountainside, stream system, and water conveyance and treatment systems. The estimated damages totaled about $6.4 million. Table 13-1 shows historical damages from flooding on major basin streams.

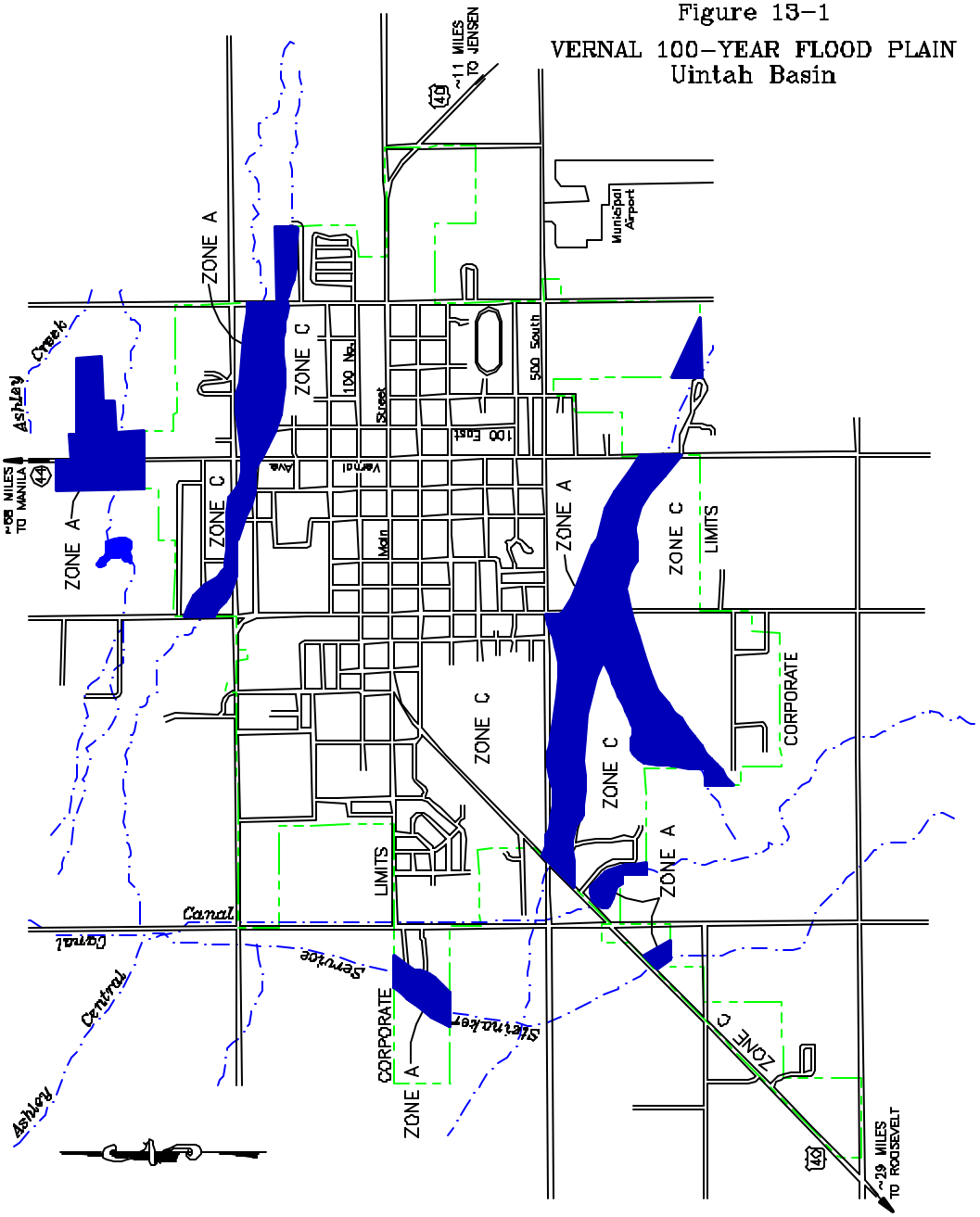
Flood Insurance Rate Maps in Figures 13-1, 13-2 and 13-3 are shown for Vernal, Myton and Duchesne cities. These maps are provided by FEMA.

13.5 Other Water-Related Emergency Problems

Water-related emergencies may arise from different types of events. Included are droughts, earthquakes, land slides and toxic spills.

Figure 13-1

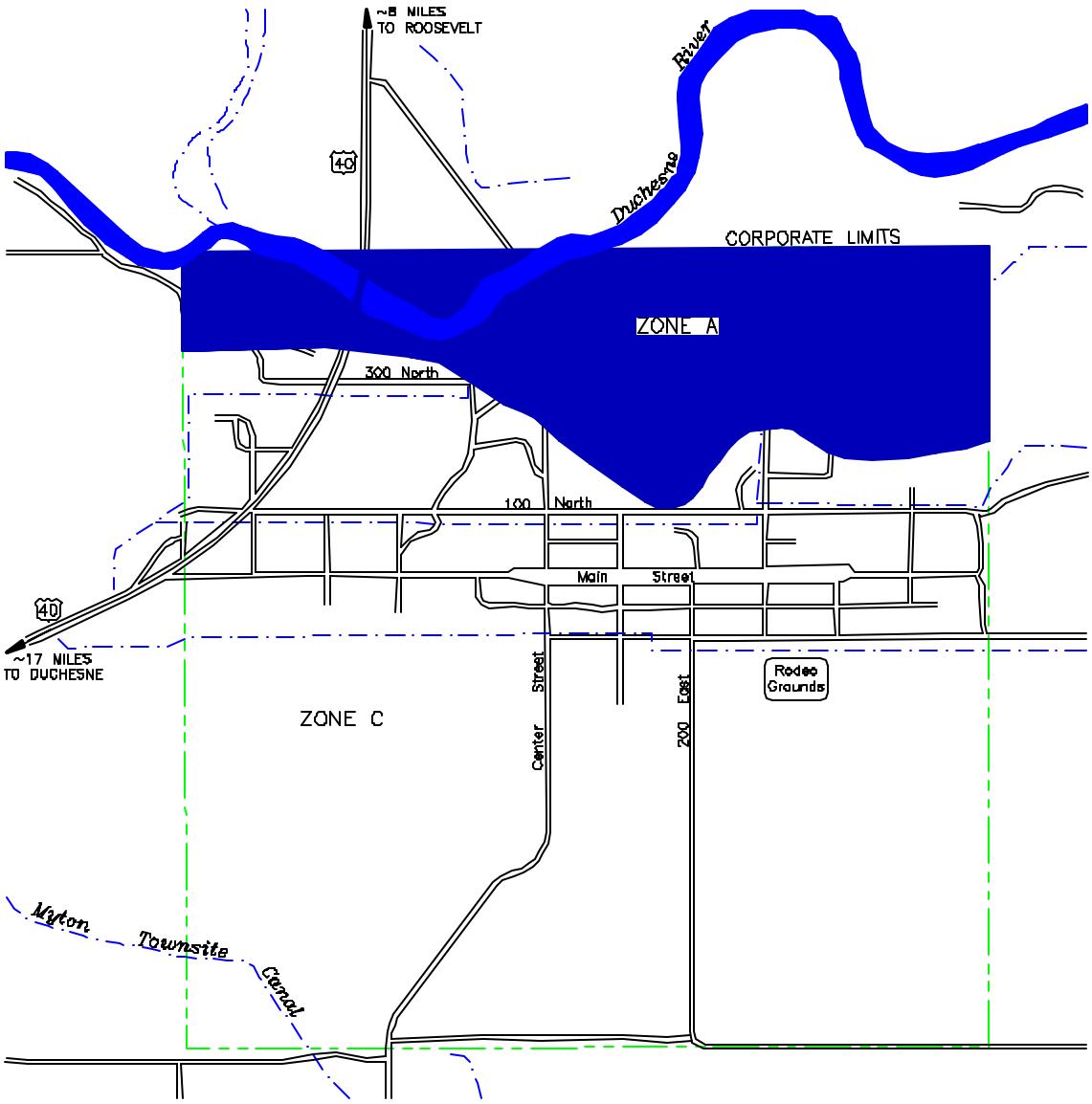
VERNAL 100-YEAR FLOOD PLAIN
Uintah Basin



Legend

	100-Year Flood Plain Area
Zone A	Flood Depths 1-3 Feet and Velocities Determined.
Zone B	Flood Depths Less Than 1 Foot and Velocities Determined.
Zone C	Areas of Minimal Flooding (No Shading)
RM 2	Reference Monument

Source: Federal Emergency Management Agency (FEMA)



Legend

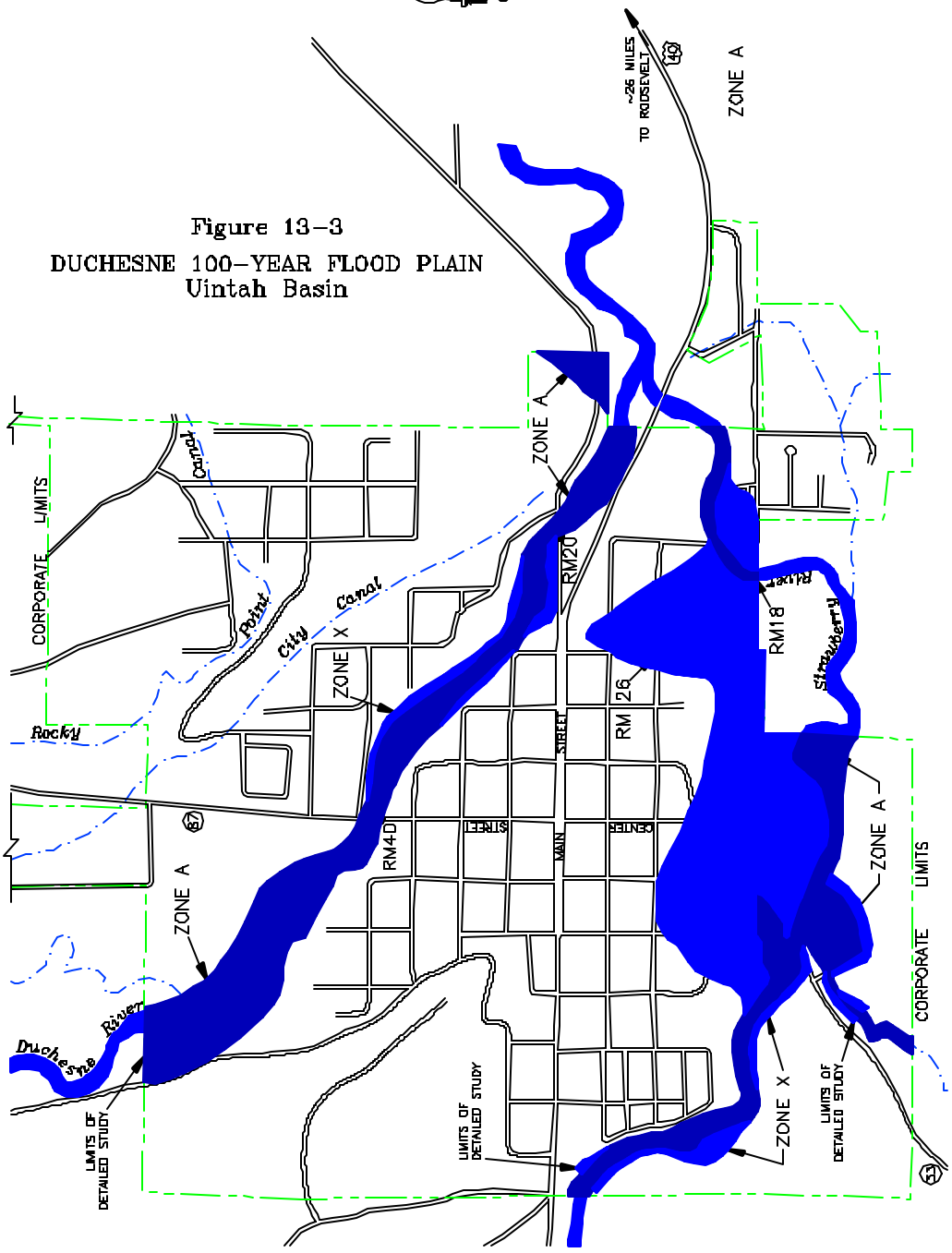
	100-Year Flood Plain Area
Zone A	Flood Depths 1-3 Feet and Velocities Determined.
Zone B	Flood Depths Less Than 1 Foot and Velocities Determined.
Zone C	Areas of Minimal Flooding (No Shading)
RM 2	Reference Monument

Source: Federal Emergency Management Agency (FEMA)

Figure 13-2
MYTON 100-YEAR FLOOD PLAIN
Uintah Basin

Figure 13-3

DUCHESNE 100-YEAR FLOOD PLAIN
Uintah Basin



Legend

	100-Year Flood Plain Area	Zone X	Areas of 500-year Flood
	500-Year Flood Plain Area	Zone B	Flood Depths Less Than 1 Foot and Velocities Determined.
Zone A	Flood Depths 1-3 Feet and Velocities Determined.	Zone C	Areas of Minimal Flooding (No Shading)
		RM 2	Reference Monument

Source: Federal Emergency Management Agency (FEMA)

Table 13-1 Flood Damages			
Stream	Location	Date	Damages ($ million)
Sheep Creek	Daggett	1965	8.0
Ashley Creek	Vernal	1983-84	3.7
Duchesne River	Duchesne	1983-84	6.4
Dry Fork/Ashley Creek	Vernal	1997	6.4

13.5.1 Drought

The Uintah Basin experienced extended droughts, starting in the 1930s. Effects of future drought events have been minimized by significant water storage that is available in Strawberry, Starvation, Currant Creek, Upper Stillwater, Steinaker, Red Fleet, Moon Lake and Big Sand Wash reservoirs.

13.5.2 Earthquakes

An earthquake is one of the more threatening natural disasters that may occur in the Uintah Basin. This could create losses of lifeline and transportation services and could damage the structural integrity of major dams. Culinary water systems as well as irrigation systems could also be damaged. Ground-shaking also has the potential to change the quantity and quality of water from wells and springs.

The Bureau of Reclamation is currently reevaluating all federally constructed dams to assess structural integrity against various levels of seismic intensity. Steinaker Dam was upgraded in 1995 to insure structural integrity during seismic activity. The Utah Division of Water Rights (Dam Safety Section) is in the process of evaluating all high and moderate hazard non-federal dams in the state. This evaluation includes seismic stability.

13.5.3 Landslides

The Mosby Canal overtopped in 1997, due to a deep snowpack and rapid snowmelt. This caused extensive damage to the mountainside and stream system. Millions of tons of red sediment, containing sand, clay, boulders, trees and general debris, were washed into Ashley Creek. The sediment caused damage to the irrigation canals and agricultural, municipal and industrial water systems.

13.5.4 Toxic Spills

The potential exists for spills of toxic substances into the Strawberry, Duchesne and Green rivers, as well as Ashley Creek, especially near the numerous oil wells in the basin. Crude oil is piped or transported by tank trucks from the oil wells to storage tanks where it is stored for further transportation to Salt Lake City for refinement. There is also a problem with oil spills at the oil well sites. Since the receiving waterways present potential sources of municipal water, disastrous damage is possible. Soil contamination and underground aquifer pollution is also possible at these sites. Also, some water is pumped with the oil to the surface. This water is separated from the oil and re-injected into back-flooding wells.

13.6 Flood Damage Prevention Alternatives

Preparation through planning and ongoing activities helps to minimize future damages. Government agencies, private organizations and families have important roles in flood damage prevention.

13.6.1 Flood Plain Zoning and Insurance

The National Flood Insurance Program (NFIP) was established by Congress with the passage of the National Flood Insurance Act of 1968. The NFIP is a federal program enabling property owners to

purchase insurance protection against losses from flooding and to discourage unwise development in flood plains. Insurance is designed to provide an alternative to disaster assistance and underwrite the escalating costs of repairing damage to buildings and their contents caused by floods.

Participation in the NFIP is voluntary and based on an agreement between local communities and the federal government. The agreement states that if a community will implement and enforce measures to reduce future flood risk to new construction in special flood hazard areas, the federal government will make flood insurance available within the community through private insurers as a financial protection against flood losses that do occur.

Flood insurance will not be available in communities having designated special flood hazard areas that choose not to participate or have been sanctioned by FEMA. Sanctioned communities are communities that have an identified special flood hazard area and have either failed to adopt or failed to enforce the required flood plain management ordinances. No disaster assistance will be available for repair or replacement of real or personal property in special flood hazard areas within nonparticipating or sanctioned communities. Communities currently participating in the NFIP in the basin are shown in Table 13-2.

Uintah, Duchesne and Daggett counties participate in the NFIP. Three separate participating communities are Duchesne, Myton and Vernal. The basin has approximately 25 policies in force and a total dollar coverage of approximately $2,295,000. These communities agree to enact and enforce minimum flood plain management requirements as stated in the *Code of Federal Regulations* (44 CFR), Part 60.3. These regulations apply to new construction and substantial improvements.

The Division of Comprehensive Emergency Management is the state coordinating agency for the NFIP. This office can help local participating communities achieve flood plain management objectives defined by the NFIP. Also, the U. S. Army Corps of Engineers, through its Flood plain Management Services Program, can develop or upgrade flood plain boundary maps at no cost for communities in need. Requests are made through the state flood plain administrator. Zoning and flood hazard reduction regulations have been adopted by local jurisdictions and counties to shape future construction to minimize damage in flood events.

Dry Fork Washout

13.6.2 Watershed Protection

Five watershed projects are being considered. See Section 10 (Sub-section 10.5.3) for more information.

13.6.3 Flood Control Structures

Prevention of flood damage depends much on families, cities and counties being prepared for a flood event. Local ordinances governing subdivision development and transportation planning should provide for safe disposal of all surface flows. Managing the stream channel where surface flows accumulate is also important. Table 13-3 shows CEM actions that should be considered by local and state agencies to prevent flood damages along major basin streams.

13.7 Drought Damage Reduction Alternatives

Drought damage can be reduced by precipitation augmentation, water conservation, increasing carryover storage in reservoirs during non-drought years and drought planning.

Table 13-2
National Flood Insurance Program Participants

Community Name	County	Date of Entry	Date of Current Map
Duchesne	Duchesne	2/4/88	2/4/88
Myton	Duchesne	2/4/88	2/4/88
Uintah County	Uintah[a]	2/1/86	2/1/86
Vernal	Uintah	3/18/86	3/18/86

[a]Incorporated areas only.

Table 13-3
Flood Damage Prevention Measures

Stream	Location	Action
Duchesne River	Duchesne	Streambanks Protection
Ashley Creek	Vernal	Streambanks Protection Bridge Abutment Protection Sediment Removal Upstream of Steinaker Feeder Canal Diversion Build Upstream Storage Reservoir
Brush Creek	Vernal	Follow Prescribed BR Flood Flow Releases for Red Fleet Reservoir
Duchesne	Duchesne	Follow Prescribed BR Flood Releases for Starvation Reservoir
Red Creek	Nr Dutch John	Debris Basin
Dry Fork	Nr Maeser	Bank Stabilization
Yellowstone River	Nr Altonah	Build Storage Reservoir
Uinta River	Nr Neola	Build Storage Reservoir
Whiterocks River	Nr Whiterocks	Build Storage Reservoir
White River	Nr Bonanza	Build Storage Reservoir
Red Creek Reservoir	Nr Fruitland	Fix Leak/West Abutment

Drought planning is a useful process to help people responsible for providing water supplies think ahead to the next drought and prepare long-range plans. Utah's drought response plan is available to provide guidance.[151]

Of immediate concern to water managers who engage in drought planning are tourism, wildlife and agricultural enterprises and cities. Hydroelectric power generation and water quality can also be adversely affected. As cities grow and tourism

activities expand, wildlife and agriculture become more vulnerable. Drought plans can establish priorities of water use.

Local governments and water right owners should develop understandings and contracts so water is more readily available when droughts occur. These can provide for water sharing so that the most valued activities continue and those who give up water temporarily are compensated. Each county in the basin should prepare, and occasionally update, a drought response plan

13.8 Other Emergency Alternatives

Actions that ensure basic security in the face of nearly all disasters include:

- Disaster response plans by individual communities and counties.
- Investigation and construction of water storage and flood damage prevention projects.
- Family emergency response plans and 72-hour emergency kits.

The Division of Comprehensive Emergency Management suggests all residents prepare a 72-hour emergency survival kit. According to experts in the field, this will allow adequate time for relief efforts to reach most residents. Along with preparing this kit, families should develop their own emergency plan outlining each member's responsibility during a disaster.

Emergency preparedness drills are a good way to familiarize family members with their duties and help ensure the family's safety. Knowing when and how to turn off natural gas, water and electric power utilities can reduce damage and save lives. Utility companies and water providers should publish guidelines.

Flood damage may be reduced by structural as well as nonstructural methods. Establishment of a storm drainage utility is an example. Plans should provide adequate flood plain management objectives to reduce flood losses. Hazard mitigation plans can be carried out by communities to deal with specific identified potential disasters such as flooding and alluvial fan development.

13.9 Issues and Recommendations

Three policy issues are discussed. They are flood plain management, hazard mitigation planning and disaster response plans.

13.9.1 Flood Plain Management

Issue - Not all local governments have plans for managing flood plains to prevent flood damage, and some plans need to be updated.

Discussion - Record precipitation in late 1982 and early 1983 created record flooding in this basin. Ashley Creek peaked at 3,800-4,200 cfs, about two to three feet above flood stage. Both costly and disruptive, this flooding exposed the vulnerabilities in local flood protection planning. Since then, stretches of Ashley Creek and the Duchesne River have been dredged. Storm drainage systems have been expanded, and awareness of flooding potential has been heightened. Flood damage prevention studies have been prepared for proposed improvements to decide feasibility and effectiveness. Where undeveloped flood plains exist, periodic flooding of wetlands and riparian areas can serve to perpetuate a critical habitat for a variety of wildlife species.

Recommendation - Participating NFIP communities should actively review their local flood damage prevention ordinances to insure they are meeting the minimum requirements for participation in the National Flood Insurance Program. An educational program on the importance of flood plain value, purpose and appropriate management should be instigated.

13.9.2 Hazard Mitigation Plans

Issue - Not all communities have hazard mitigation plans.

Discussion - Community leaders are encouraged to develop mitigation strategies to eliminate or lessen impacts of a disaster. In the hazard mitigation planning process, agencies set priorities for these strategies and estimate costs and time frames to address proposed mitigation. Hazard mitigation may include structural and nonstructural

activities as they relate to flood protection. The Division of Comprehensive Emergency Management is responsible for disaster and emergency response at the state level. It prepares, carries out and maintains state mitigation programs.

Recommendation - Local governments should prepare hazard mitigation plans with assistance from the Division of Comprehensive Emergency Management.

13.9.3 Disaster Response Plans

Issue - All communities do not have a disaster response plan.

Discussion - Local governments need to increase their ability to respond to natural disasters and emergencies. Emergency Operations Plans (EOPs), also called Disaster Response Plans, address disaster response and recovery activities following a disaster. These plans should be prepared ahead of time allowing counties, cities and towns to coordinate efforts and define responsibilities. Elected officials and agency managers should decide leadership positions and timing of response activities. Uintah, Duchesne and Daggett counties have Emergency Operation Plans (EOPs) that identify hazards in the counties. An EOP can also address disruption or contamination of, or an exceptional shortfall in, water supply emergencies and may result in a temporary limitation of available water. When this happens, water managers should set priorities on deliveries to meet critical needs first. Emergency Actions Plans (EAPs) have also been developed, or are being developed, for all dams in the state. The Division of Comprehensive Emergency Management reviews the private dam EAPs to ensure an adequate list is incorporated in the plan. This review is done in cooperation with the State Engineer's Dam Safety Section.

The Division of Comprehensive Emergency Management has the statewide responsibility of planning for, responding to, recovering from and mitigating emergencies. It has developed statewide plans for disaster response.

Recommendation - Local communities should develop emergency operation plans with the assistance of the Utah Division of Comprehensive Emergency Management. ❑